

Third West Weekly Report Shepherd, Michael

to:

Joyce Ackerman, 'Craig Barnitz (cbarnitz@utah.gov)'

05/15/2012 05:16 PM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@rockymountainpower.net>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbarnitz@utah.gov)'" <cbarnitz@utah.gov>

7 Attachments

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Weekly Reports 05-07 to 05-11-12.pdf Third West Weekly Log 2012-19.pdf 235354-1.pdf 235424-1.pdf 235505-1.pdf

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235584-1.pdf 235688-1.pdf

Joyce & Craig,

Attached are the reports for the week of May 7, 2012.

All air monitoring results came back negative.

Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
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3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

	DAIL! CHECKEIS!
DATE:	05/07/11
General	
	rk area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump tracks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
	Exclusion zone operations are practiced as instructed.
	☑ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	✓ Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
_	sites and track out prevention.
☑	Review sign-in/sign-out log throughout and at the end of the workday.
	Secure the site at the end of the workday
Sampli	<u>ng</u> .
NA Soil	Confirmation sampling for any newly excavated areas
	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
	removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





Electronically file photo files into the on-site database
Complete Field Documentation
Field Sample Data Sheets (FSDS)
Z Logbook
On-site computer database
Label each sample media with a unique number
Seal sample(s) in zip lock plastic bags
Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>05/07/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x		26	
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.		3	х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	,
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	65		х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone not active today.

CVE finished digging out area for spread footers between switch gear and transformer in bay 2. This temporarily uncovers some native soil. The pile containing native material will be used to back fill and was covered with plastic.

Newman backfilled and compacted over retention envelope along south side of yard. They were encouraged to apply water to exposed native material throughout the yard due to windy and dry conditions.

CVE line crew worked on ground grid and grounding rods. Jones drilling was on site to drill through concrete slab about 10-12 feet under the surface for rod placement. This drilling may have brought soil to the surface that lies under a concrete foundation.

CVE electricians continued working on control cable layout and connections.

Wasatch/south Wire were in the yard and on the west side of 4th west splicing transmission cable. Weather was cool, dry and windy in the afternoon with temperatures around 70.



NA

determined necessary



3^{RR} WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

ATE:	05/08/11
, ,	U3/U3/11
General	
	k area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
NA	activities for the day Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues
	and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
abla	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
$\overline{\checkmark}$	Review sign-in/sign-out log throughout and at the end of the workday.
<u>a</u>	Secure the site at the end of the workday
<u>Samplir</u>	ng
NA Soil	Confurnation sampling for any newly excavated areas
	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal

Digitally photograph each sample location and at any place field sampling personnel





		Electronically file photo files into the on-site database
		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
		Logbook
	abla	On-site computer database
		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
Ø		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental
		Samples
		Review and disseminate sample results as received from the laboratories to Project
		Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 05/08/12		
Location: 3rd West, 1st South, SLC	Job Number:		
Survey Conducted By: _Justin Kargis	Title:		

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			X	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.		a	x	A
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x		* =	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	**
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x ,	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			• ,
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	х			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			4
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	х			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a)	Bi-directional earth moving equipment shall have audible alarms.	х	5		

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone not active today.

Newman continued backfilling, compaction and placing yard rock under structure steel. They were encouraged by R&R to apply water to all areas of exposed native material.

CVE fabricators worked on forming spread footings between switch gear and transformer 2. This activity temporarily places them in close proximity to small amounts of native material.

CVE line crew continued working on ground grid and rods throughout section to be energized next week.

CVE electricians continued control cable layout and connections.

Jones drilling core-drilled two more holes for grounding rod.

Weather was warm, dry and breezy in the afternoon with temperatures in the high 70's.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	05/09/11
General	
	k area Health and Safety Inspection
NA NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
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NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
☑	Exclusion zone operations are practiced as instructed.
	Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
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\square	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
Ø	Review sign-in/sign-out log throughout and at the end of the workday.
Ø	Secure the site at the end of the workday
<u>Samplin</u>	ng •
NA Soil	Confirmation sampling for any newly excavated areas
1	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





Electronically file photo files into the on-site database	,
Complete Field Documentation	
Field Sample Data Sheets (FSDS)	
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Label each sample media with a unique number	
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Package samples for transport IAW SOP 2-1, Packaging and Shipping of Samples	Environmental
Review and disseminate sample results as received from the laboratories t	o Project
• · · · · · · · · · · · · · · · · · · ·	•
Electronically file sample reports into on-site database	
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Project: 3rd West Sub Station	Date: 05/09/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	,
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	*
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.	4		х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

Standard	Title	In Compliance	Out of Compliance	O N/A	Corrective Action Taken and Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c)	Stair rail and handrail along each unprotected edge.			x	6
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	*
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

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1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

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Standard	Title				Date Date
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1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	х			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	,

Exclusion zone active once excavations began.

Newman dug holes for capacitor bank foundations in EZ. They suited up in PPE for this work. They then continued placing yard rock under structure. They sprayed water on the native soil stockpile in exclusion zone.

CVE line crew continued excavating for, placing and burying grid and platforms.

CVE fabricators continued working on forms for piers between switch gear and bay 2 transformer.

CVE electricians continued working on control cable placement and connections.

South wire and Wasatch electric continued 138 kV cable splicing.

Weather was warm and dry with light winds and temperatures near 80.





3^{RR} WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	05/10/11
General	
	k area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA ·	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
$\overline{\mathbf{A}}$	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	✓ Workers are using decontamination unit as instructed.
	✓ Workers use personal protective equipment properly.
☑	Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
\square	sites and track out prevention.
☑	Review sign-in/sign-out log throughout and at the end of the workday.
™	Secure the site at the end of the workday
Samplin	ng en
NA Soil	Confirmation sampling for any newly excavated areas
\square	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





Electronically file photo files into the on-site database
Complete Field Documentation
Field Sample Data Sheets (FSDS)
Logbook
On-site computer database
Label each sample media with a unique number
Seal sample(s) in zip lock plastic bags
Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
Electronically file sample reports into on-site database



Project: 3rd West Sub Station		Date: 05/10/12		
Location: 3rd West, 1st South, SLC	¥	Job Number:		
Survey Conducted By: _Justin Kargis		Title:		

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			x	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			х	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х		,	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) .	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			2
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

	In Compliance Out of Compliance	N/A	Corrective Action Taken and		
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	,
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	X			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	х			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	¥
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			

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		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone inactive today.

Newman backfilled and compacted along south fence of yard. They also continued adding yard rock under structure steel.

CVE line crew continued with installation of ground grid.

CVE fabricators continued setting forms for piers near switch gear.

CVE electricians continued working on control connections.

South wire & Wasatch electric completed splicing of Gadsby line in vaults.

Weather was warm, sunny and dry. Windy in the afternoon with temperatures decreasing through the day to the low 70s.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

	DAILY CHECKLIST
DATE:	05/11/11
	i
General	
	k area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
· NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
\square	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	Workers use personal protective equipment properly.
. 🗹	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
I .	Secure the site at the end of the workday
Samplin	ng .
NA Soil	Confirmation sampling for any newly excavated areas
	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
. —	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
TAT 4	removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





	Electronically file photo files into the on-site database
\square	Complete Field Documentation
\square	Field Sample Data Sheets (FSDS)
$\overline{\mathbf{Q}}$	Logbook
☑	On-site computer database
	Label each sample media with a unique number
\square	Seal sample(s) in zip lock plastic bags
\square	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
\square	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
\square	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>05/11/12</u>
Location: 3 rd West, 1 st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.		1	х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b)	Employer responsibility to initiate and maintain safety and health programs.			х	a.
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

, Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	x			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			· ·
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.		/4	Х	

Standard	Title	In Compliance	Out of Compliance	□ N/A	Corrective Action Taken and Date
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.	2	el el	х	ě.
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	5.
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x	6		
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	y :
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.		8	х	

Exclusion zone inactive today.

Newman back filled and compacted around structure steel. They also continued adding yard rock around bay 2 and sprayed water on the stockpile of native material in the EZ.

CVE fabricators poured concrete for structural piers between switch gear and bay 2 transformer. They also poured porches near circuit breaker pads.

CVE line crew not on site today - they started working 4 10 hour shifts this week.

CVE electricians continued control cable connections.

South wire and Wasatch electric continued working on transmission line splicing and connections.

Weather was warm, sunny and windy in the afternoon with no precipitation and temperatures in the mid 70's,



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

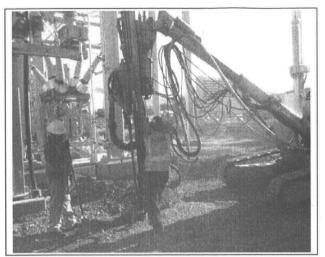
R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

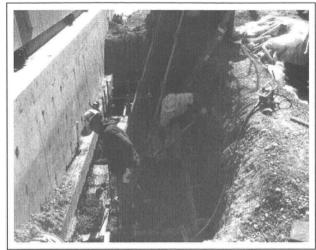
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/07/12	FILE:	

SITE PHOTOGRAPHS

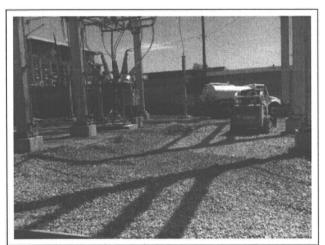




РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

 DESIGNED BY:
 SCALE:
 REVIEWED BY:

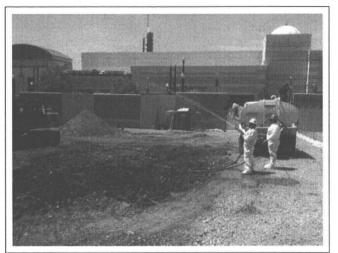
 DCR

 DRAWN BY:
 DATE
 FILE:

 JMK
 05/08/12
 FILE:

SITE PHOTOGRAPHS





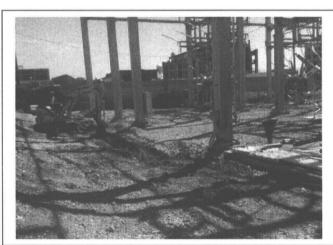
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

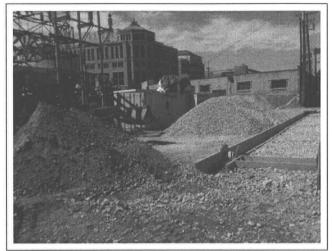
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/09/12	FILE:	

SITE PHOTOGRAPHS

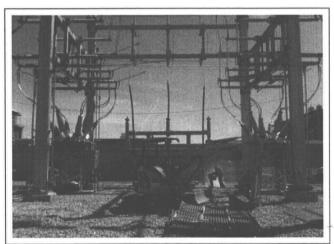




РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

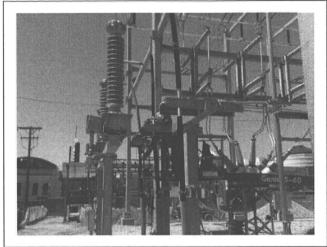
47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

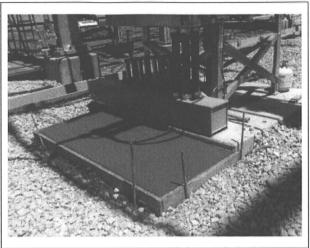
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/10/12	FILE:	

SITE PHOTOGRAPHS

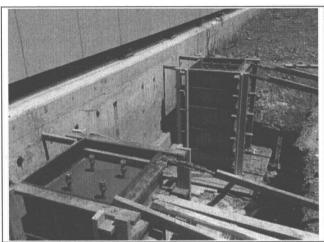




РНОТО 1



РНОТО 2



РНОТО 3

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/11/12	FILE:	

SITE PHOTOGRAPHS



PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild Monday, May 7, 2012 PROJECT NAME: DATE: PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Stop Time: 17:15 Crew Start Time: 7:00 Tot Hrs mns: 17:20 Tot Hrs mns: 10:23 FCR Start Time: 6:57 FCR Stop Time: Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 51 degrees in AM, 68 degrees in PM DESCRIPTION: (work performed, general comments, Instructions to contractor, # of crew members onsite.) R&R set four monitors. CVE Fab Crew started forming up the fdn mats for the N fdns (4 ea.) north of xfmr #2. CVE Electrical Crew worked eight hours and backfilled the conduits running from xfrnr #2 to the cable trench and pulling in wires. CVE Line Crew cleaned up scrap aluminum from the CB center bushing jumpers and installed grounding along the south fence line overe the top of the geogrid wall. Newman is placing the geotech wall (west 40') and placed ABC over the exposed ground grid installed by the. Southwire/Wasatch, completed the cutting and racking of the conductors in the vault for the Gadsby line. They will begin the splicing process on Tuesday morning. Main Wasatch crew will be gone for one week. CVE Line Crew = 6. CVE Fab Crew = 3. CVE Electrical Crew = 3. Newman = 4, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Gus Montanez 0657 Dispatcher logout, name and time: Barry Nielson 0524 IMMEDIATE CORRECTIVE ACTION TAKEN: DISCREPANCIES: **DELAYS OR LOST TIME ENCOUNTERED:** EQUIPMENT (working, delivered, idle): CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backnoe.

Rocky Mountain Power

OSHA Recordable Safety Incidents:

Russ Johnson

Field Construction Representative

Reported by:

Time:

PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild DATE: Tuesday, May 8, 2012 PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric 6:50 Crew Start Time: Crew Stop Time: 17:15 Tot Hrs mns: 6:41 17:35 FCR Start Time: FCR Stop Time: Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 53 degrees in AM, 74 degrees in PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set four monitors. CVE Fab Crew continued forming up the fdn mats for the N fdns (4 ea.) north of xfmr #2. Poured in AM. They worked on fonns for the circuit breaker porches and in the PM they started tying rebar for the stems for the N foundation. CVE Electrical Crew (1 man) worked eight hours tenninating cables in the switchgear from xfmr #2. CVE Line Crew spent most of their day installing grounding along the south fencline and around xfmr #1. Jones returned today and drilled the last two holes through the concrete floor for the ground rods. Newman spent the day grading, compacting, and placing yard rock inside the cable trench area. They got about half way across the yard, starting at the west cable trench and moving east. Southwire/Wasatch started and completed splicing the first conductor (B Phase) in the vault (bottom phase) for the Gadsby line. Main Wasatch crew will be gone for one week. CVE Line Crew = 6, CVE Fab Crew = 3, CVE Electrical Crew = 1, Jones = 2, Newman = 4, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Gus Montanez 0641 Dispatcher logout, name and time: Gus Montanez 1739 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

Rocky Mountain Power

Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild Wednesday, May 9, 2012 PROJECT NAME: DATE: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO. : Crew Stop Time: Tot Hrs mns: Crew Start Time: 17:00 17:00 FCR Start Time: 6:39 FCR Stop Time: Tot Hrs mns: 10:21 Use military time format 00:00 WEATHER CONDITIONS: Sunny - 54 degrees in AM, 80 degrees in PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set four monitors. CVE Fab Crew tied the rebar for the stems on the four N fdns and placed forms. CVE Electrical Crew (1 man) worked eight hours terminating cables in the switchgear from xfmr #2. CVE Line Crew spent most of their day installing grounding along the east roadway and around xfmrs #1 and #2. Newman spent the day grading, compacting, and placing yard rock inside the cable trench area. They also excavated for the two cap banks and the getaway fdns in the 46 kV yard. Southwire/Wasatch completed the second splice (Phase A) for the Gadsby line. Main Wasatch crew will be gone for one week. CVE Line Crew = 6, CVE Fab Crew = 2, CVE Electrical Crew = 1, Newman = 4, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Jeremy Gentry 0639 Dispatcher logout, name and time: No call made **DISCREPANCIES:** IMMEDIATE CORRECTIVE ACTION TAKEN: Determined that 3 layers of geotech wall won't bring the grade up to roadway elevation. Talked to John Mancini and received direction to cap the aeotech wall with 12" lift of ABC. Will be about 12" too low. DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

Rocky Mountain Power

Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West Sub -	Rebuild	DATE:_	Thurs	day, Ma y 10, 2	2012
PO & Work Order NO. :	3000078050 / 100	035803	MAIN CONTR	ACTOR:	Cache Valley	y Electric
Crew Start Time:	6:55	Crew Stop Time:	17:25		Tot Hrs mns:	10:30
FCR Start Time:	6:42	FCR Stop Time:	17:45		Tot Hrs mns:	11:03
Use military time format 00:00		•			_	
WEATHER CONDITIONS:		Sunny - 53 degre	ees in AM, 70 de	g r ees in P	M	
DESCRIPTION: (work performe R&R set four monitors. CVE Fab Cre						
Electrical Crew (1 man) worked ten hovaults, building ground mats and insta ABC and yard rock. Southwire/Was the Gadsby cables. Southwire/Wasathe 138 kV yard. Main Wasatch crew Newman = 4, R&R = 1, Wilding = 1.	illing mats. N ewman spatch completed the thirtich will have two p eople	pent the day completind splice (Phase C) for terminating at the steep t	g the grading above the Gadsby line. Nel stmcture on 100	ve the geote Wasatch pla O South and	ech wall and sto- aced conduit sle I two people terr	ckpiling eves over ninating in
IF WORKING IN ENERGIZED SU	JBSTATION:					
Dispatcher login, name and time:	Jeremy Gentry 0642			-		
Dispatcher logout, name and time:	Gus Montanez 1745					
DISCREPANCIES:			IMMEDIATE CO			
5/10 - Insufficient FTB coverage over the	138 KV duct bank		Contacted Roger Fuessue.	erst to see he	ow he wants to ad	dress this
			ssue.		-	
			· · · · · · · · · · · · · · · · · · ·			
	.					
DELAYS OR LOST TIME ENCOU	JNTERED:					
EQUIPMENT (working, delivered CVE fab crew: Portable toilet (3), forklift, JLG (2), tool trailer. Newman: trachoe (2)	1 dumpster, office trailer,			, crew truck.	CVE Line Crew:	Pickup (2),
OSHA Recordable Safety Incide	ents:			Reported I	by:	Time:
<u></u>	····		,			

Rocky Mountain Power

Russ Johnson

Field Construction Representative

PROJECT NAME: Third West Sub - Rebuild DATE: Friday, May 11, 2012 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO.: 3000078050 / 10035803 Crew Start Time: Crew Stop Time: 16:00 Tot Hrs mns: 16:19 FCR Start Time: FCR Stop Time: Tot Hrs mns: 9:37 Use military time format 00:00 Sunny - 53 degrees in AM, 73 degrees in PM **WEATHER CONDITIONS:** DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set four monitors. CVE Fab Crew completed the N fdns and forming and tying rebar for the breaker porches. They poured the N fdns and the breaker porches. CVE Electrical Crew worked on wiring for xfmr #2 and the west bus differential box as well as the Jordan circuit CCVTs. CVE Line Crew is working 4-10's this week so they are off today. Newman spread gravel along the south side of the south cable trench, the gravel on the north side of the north cable trench, and worked on the grade for the east roadway and the roadway between the switchgear and xfmr #1. Emerson came on site this morning but determined that they would return on Monday when more work was completed for them to test. Southwire/Wasatch is mobing into the substation and at the Gadsby termination pole to start the terminations. They got the three cables at each end prepped, heated and squared up. Main Wasatch crew will be gone until Monday, May 14. CVE Line Crew = 0. CVE Fab Crew = 6, CVE Electrical Crew = 3, Newman = 4, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Jeremy Gentry 0642 Dispatcher logout, name and time: Gus Montanez 1619 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: 5/10 - Insufficient FTB coverage over the 138 KV duct bank Contacted Roger Fuerst to see how he wants to address this **DELAYS OR LOST TIME ENCOUNTERED:** EQUIPMENT (working, delivered, idle): CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex. (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe. Reported by: Time: OSHA Recordable Safety Incidents:

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

Rocky Mountain Power

Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild DATE: Saturday, May 12, 2012 3000078050 / 10035803 PO & Work Order NO. : MAIN CONTRACTOR: Cache Valley Electric Crew Start Time: 7:00 Crew Stop Time: Tot Hrs mns: 12:30 FCR Start Time: 6:46 FCR Stop Time: Tot Hrs mns: 5:44 Use military time format 00:00 **WEATHER CONDITIONS:** Sunny -43 degrees in AM, 75 degrees in PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R did not set up monitors today. CVE Fab Crew did not work today. CVE Electrical Crew did not work today. CVE Line Crew did not work today. Newman did not work today. Emerson did not work today. Southwire/Wasatch is working at both the substation and the Gadsby terminal pole. They prepped all six cable ends and are ready to install stress cones on Monday. Main Wasatch crew will be gone until Monday, May 14. CVE Line Crew = 0, CVE Fab Crew = 0, CVE Electrical Crew = 0, Newman = 0, R&R = 0, Wilding = . IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Kelly Astill 0646 Dispatcher logout, name and time: Paul Farr 1235 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: 5/10 - Insufficient FTB coverage over the 138 KV duct bank Contacted Roger Fuerst to see how he wants to address this DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable tojlet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

Rocky Mountain Power

Russ Johnson

Field Construction Representative



May 9, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 235354-1 None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235354-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101898-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235354-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

May 8, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 8, 2012

Client ID Number	Lab ID Ni	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-050712 W	EM	880308	0.0900	929	ND	0.0046	BAS	BAS
3W-050712 N	EM	880309	0.0900	929	ND	0.0046	BAS	BAS
3W-050712 E	EM	880310	0.0900	929	ND	0.0046	BAS	BAS
3W-050712 S	EM	880311	0.0900	931	ND	0.0046	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm



DATA QA

Oue Date: 5/0/12

Due Time: 4.20

RELAB RESERVOIRS ENVIRONMENTAL, INC.

Pager: 383-569-2698

			INVOICE TO: (IF	DIF	FERE	ENT)									C	ONTAC	T IN	FOR	MATIC	DN:			_
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NOTE: R	samples received: El will anolyzo Incomin as Indicatos oo this Cha	(Ai g somples based upon information received and will n ain of Custody shall constitute on analytical services a	dditional samples shall be listed on ot be responsible for errors or emissions in a preomem with payment terms of NET 30 day	colcula	tions res	sulting f	rom t	ha inacci	racy o	f origin	ni date It in a 1	. By si	gning C	liont/c	ompany re	preser tatt	vo agro	es tha	t submiss	Jon of t	the following san	nples for ro	Questod
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite T = Tremolite Structure Types F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected

M = other structure associated with a matrix

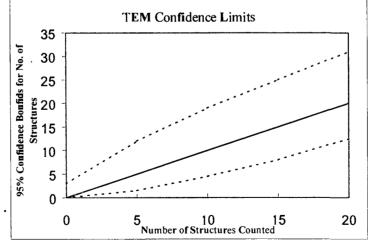
NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

Jeanne S. Orr Paul D. LoScalzo Nathan DelHierro Mark Steiner Angela Heitger Norberto Zimbleman Jonathan Bernard Robert Workman TEM Confidence Limits



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N 🔊
Voltage (KV)	100 KV
Magnification	₹0KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	12+12
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	925
Date received by lab	5/8/12
Lab Job Number:	235354
Lab Sample Number:	880308

Analyzed by	-102
Analysis date	5/8/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	\mathcal{O}
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pre	ps Only):
Fraction of primary filter used	
Totat Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class			•	1 = ye	es, blank	= no
Gild	Grid Operaring	Туре	Primary	Total	Length	Width	dentincation	Amphibole		NAM	Sketch/Comments	Sketch	Photo	EDS
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B	24-1	M												
	K4-1	M												
	H1-1	M)												
	(14-)	M												
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Reservoirs Environmental, Inc. TEM Astrestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	₹0KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	R+12.
Sample Type (A=Air, D=Dust):	A
Air yolume (L) or dust area (cm2)	. 929
Date received by lab	5/8/12
Lab Job Number:	235354
Lab Sample Number:	880309

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Analyzed by	-662
Analysis date	5/8/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	Ď
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str		Dimer	nsions	Identification	Mineral Class	·			1 = y	es, blank	= no
0.10	Gild Opening	Туре	Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
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Rasarvoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REi
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid openina area (mm2)	0.01
Scale: 1L =	. 0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	,

Client:	R+12.
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	. 929
Date received by lab	5/8/12
Lab Job Number:	235354
Lab Sample Number:	880310

F-Factor Calculation (Indirect Preps Fraction of primary filter used	J.1197.
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	-112
Analysis date	5/8/12
Method (O=Direct, I=Indirect, IA=Indirect, ashed)	Ď
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Afignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str		Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
J 0110	Ond Opening	Туре	Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
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	623	Mo			·									
	(2-3	M												
	63-6	NSO						·						

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 CX N 🖘
Voltage (KV)	100 KV
Magnification	£0KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	R+R.
Sample Type (A=Air, D=Dust):	A
Air yoluine (L) or dust area (cm2)	. 931
Date received by lab	5/8/12
Lab Job Number:	235354
Lab Sample Number:	880311

F-Factor Calculation (Indirect Preps (Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	-112
Analysis date	5/8/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	\mathcal{L}
Counting rules (ISO, AHERA, ASTM)	AH
Gnd storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Stru	ctures	Dimer	nsions_	Identification	Mineral Class				1 = ye	es, blank	= no
Gila	Grid Opening	Туре	Primary	Total	Length	Width	identification	Amphibole	C NA		Sketch/Comments	Sketch	Photo	EDS
A	43-4	M		· · · ·										
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	E3-4	M			25		NH -1)	112					ı
	E3-41	M					,	F						Ĺ
0	€36	W			,				-					
	03%	(M)												
	33-6	(v)												
	A 3-6	M						·						
				:		1								

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysotiie

NAM = Non-asbestos material

T:\Warksheet in TEM Bench meet doc

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



May 10, 2012

Laboratory Code:

RES NA

Subcontract Number: Laboratory Report:

RES 235424-1

Project # / P.O. #
Project Description:

None Given

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory Is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235424-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235424-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

May 9, 2012

TEM, AHERA

Turnaround:

24 Hour

Date	Samples	Analyzed:	

May	10,	2012
-----	-----	------

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ber ID Number An		Analyz <u>e</u> d	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-050812 W	EM	880453	0.0900	923	ND	0.0046	BAS	BAS
3W-0S0812 N	· EM	880454	0.0900	923	ND	0.0046	BAS	BAS
3W-0S0812 E	EM	880455	0.1000	767	ND	0.0050	BAS	BAS
3W-050812 S	EM	880456	0.0900	923	ND	0.0046	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

Due	Date:	5	10		12
	Time:		1	Į.	W_

Phone Email Fax

Date

Time

Contact



.lob#

Due filme.	5801 Logan St Oanver,	CO 802	218 • PI	h: 303	964-19	96 · Fa	× 303-	477-42	TS ·	Toli Fr	BO :885	RESI-EN	v ** *	, , , , , , , , , , , , , , , , , , ,	-			Page	1 of
•	Pager : 303-50																		
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Company: Re R Environmental	Company:							Dai	ne	la	اعطاه	U/				Contatt	: 		<u></u>
Address: 47 U 9003 #2	Address:					Pho										Phorw:			
Sandy U. 84070	ļ					Fea		-				2 /2				Fax			<u> </u>
	J					Cen	pager.	Delive	19	24 ($-\omega$	>>				Cell/pog	or 		
Project Number and/or P.O. #: Project Oesception/Location: 35% West Sub - 2MP												٠,دنۍ	-						
ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm				· ·	R	EQU	EST	ED A	NAL	YSI	s				VAL	JD MA	TRIX C	ODES	LAB NOTES:
PLM / PCM (EM) RUSH (Same Day) PRIORITY (Naxi Da	y)STANDARD	1 1						-							Air=			Bulk ≈ B	
(Rush PCM = 2hr, TEM = 8hr.) CHEMISTRY LABORATORY HOURS: Weekdays: 9am - Spm		-		1]]			-							ust =			Paint = P	
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Organics 24 hr S day S Day	turnarounds.**	Point Count	.+ Prepa		1 1	Metals			1			antification		"AST	M E1			media only**	
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E.call O157:H7, Colilbrms, S.aureus 24 hr 2 Day	3-5 Day	ا ۾ [740e 30-Ind	₹] [Fume,				일	퇽	Est S			Ì]]) .	
Salmonslla, Listeria, E.coli, APC, Y & M 48 Hr3-5 Da	у	Long	~ 8	OSHA	暑し	B.			7	看	8 8	F 8 8	i			1 1		Ì	
MoldRUSH24 Hr	_48 Hr3 Day5 Day] 3	Level II, D-vac, F	7400B,	Respirable	yte(s) Welding	_		֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	5 8	১ ১	리투양				1		i '	
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Special Instructions:	,	Short	E SE		12	S 2	ORGANICS - METH	E.coli 0157	terla	E 00 E	Coliforms S.aureus:	A H	- 1	Sample V (L) / Area	Matrix Code	# Containers	Date	Time	EM Number (Laboratory
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Cliont sample ID number (Sample ID's must be unique	<u>e)</u>	=	F 8	T	ā	a∝	0	_	MICR	OBIC	LOOY	133		<u> </u>	- 2≥		nwi/dd/yy	h/v/mm a/p	20016 - 5
1 3W-0508(2W		1-1	<u> </u>		\vdash		4	44	Н.	+	44			923	4) đ	08/12		880453
2 3W-05081ZN		\bot		\perp			_	_ _	<u> </u>	-11	\perp			823			1		54
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6			: _													:			
7																			
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9						1	[T								
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Number of samples received: (Addition NOTE: REI will analyze Incoming sample based upger/fiformation received and will not be	onal samples shall be listed on							f origina	of date.					sentative	agree	es that su	ıbmission of	the following sam	ples for requested
enalysis es indicated on this Chain of Costody shall constitute en analytical sen foes egreen						ment tar	ws Ms	y resid	t In a 1	1.5% π	onthly	nterest sur	charge.						
12.00	nent with payment tenns of NET 30 day			mply w	ith pays		7	_	t In a 1	1.5% m	onthly	nterest sur	charge.	ļe	nole :	Condis	on: -	In Ica S	polod Intest
Relinquished By: Laboratory Use Only		s, failur		Dale	ith pay		5િટ	ह्या	2			33 (Conditi			ealed Intact

Contact

Initials

Phone Email Fax

Date

Time

Initials

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F	=	Fiber
An	=	Anthophyllite	В	=	Bundle
C	=	Chrysotile	C	=	Cluster
Cr	=	Crocidolite	M	=	Matrix
T	=	Tremolite			

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

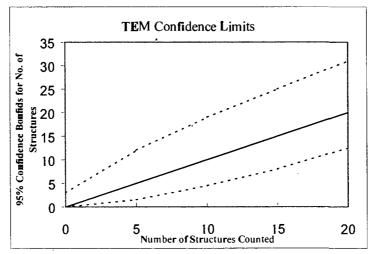
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX 🕟 S
Voltage (KV)	100 KV
Magnification	GOKO 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	-

Client :	RX
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	923
Date received by lab	5/9/12
Lab Job Number;	235424
Lab Sample Number:	880453

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	5/10/12
Method (D=Direct, I=Indirect, IA=Indirect, asbed)	7
Counting rules (ISO, AHERA, ASTM)	AH
Grtd storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	nctures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
Ond	Ond Opening	Туре	Primaty	Total	Length	Width	, acitalogic	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H2-6	ND						<u> </u>						
	G26	ND		I	Page	A	80% in	mf . 5%	debr	رخ د				
	F2-6	ND			Pans	\mathcal{B}	90% on	mt 5%	debu	۲				
	E2-6	ND						4	:					
	C2-6	ND		L—————			11	5/10/12		! 				
13	H5-1	NO						, ,		<u></u>				
	G5-1	M				·		 						
	F5-1	ND										·		
	E5-1	ΝΌ												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (S
Voltage (KV)	100 KV
Magnification	TOKX 10KX
Grid openino area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	923
Date received by lab	5/9/12
Lab Job Number:	235424
Leb Sample Number:	880454

Analyzed by	13
Analysis date	5/10/12
Melhod (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting nules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to Secondary filter (mi)	

Grid	Grid Opening	Structure			Dime	nsions	Identification	Mineral Class			1 = y	es, blank	= no	
- Control		Туре	Primary	Total	Lenpth	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F3-1	MD												
	E3-1	ND			P	up *	80%	intent	=	26	elons			
	C3-1	ND.		-	Pa	pB	90%	inhat	_ر	% de				
	B3-1	ND					100		6					
	34-4	ND					-	11	5/10	0/12				
B	53-1	MD							//					
	H3-1	ND						,			,.			
	G3-1	ND			,									
	E3-4	ND				!								
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Reservoirs Environmental, Inc. TEM Asbestos Strueture Count

Laboratory name:	REI
Instrument	JEOL 100 CX (S
Voltage (KV)	100 KV
Maanification	COKO 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

R+	<u> </u>
A	
76	,7
23	424
880	455

Analyzed by	迈
Analysis date	5/0/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Anaiyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	1
Total Resuspension Volume (ml)	·
Volume Appliad to secondary filter (ml)	

Grid	Grid Opening	Strature	No. of Str	nctures	Oime	nsions	Identificatkm	Mineral Class				1 = yes, blank = no		
Gild	Grid Operang	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	G4-4	ND												
	F4-4	ND		,	Pre	o A	90%	shut 5	Look	aris				
	E4-4	ND			Pw	B	450%	inhut 5	0//		·			
	C4-4	ND										·		
	34-4	MD					1.15	5/10/12				·		
B	H2-3	2					/7	<i>/</i> .						
	G23	2				/					v.*	·		
	F2-3	ND			,									
	E2-3	3												
	C2-3	5												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 CX 1 S
Voltage (KV)	100 KV
Magnification	60KX 10KX
Grid openina area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 10 =	0.056 um
Primany filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	,

Client :	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	923
Date received by lab	5/9/12
Lab Job Number;	235424
Lab Sample Number:	88045G

F-Factor Calculation (indirect Preps Only):						
Fraction of primary filter used						
Total Resuspension Volums (ml)	·					
Voluma Applied to secondary filter (mt)						

Analyzed by	JB
Analysis date	5/10/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	
Counting mles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

Grid	Grid Opening	Stmcture	No. of St	nctures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	≈ no
Ond	Ond Opening	Туре	Prenary	Total	Length	Width	Identification	Amphibote	C NAM		Sketch/Comments	Sketch	Photo	EDS
A	G3-6	ND												
	F3-6	ND		·	() NA	80	Contint	5-1	0%	nebus			
	E3-6	ND			0		80	Combut	5-10	0	ebus			·.
	C36	ND			,			- (,	
	C4-6	ND						1.13	5 holiz					<u> </u>
B	H4-1	NO						71						
	64-1	ND												
	F4-1	20						·						
	E4-1	2						<u>.</u>						
								,						

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000 \text{cc}}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



May 11, 2012

Laboratory Code:

RES

Subcontract Number: Laboratory Report:

NA RES 235505-1

Project # / P.O. #

None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environfnental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235505-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235505-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

May 10, 2012 TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 11, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
D Number	ID Nu	ID Number		Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	· (L)		(s/cc)	(s/cc)	(s/mm²)
3W-050912 W	EM	880585	0.0900	936	ND	0.0046	BAS	BAS
3W-050912 N	EM	880586	0.0900	936	ND	0.0046	BAS	BAS
3W-050912 E	EM	880587	0.0900	936	ND	0.0046	BAS	BAS
3W-050912 S	EM	880588	0.0900	930	ND	0.0046	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm



DATA QA

Due Date: 5 11 12 Due Time:___



	·			INVOICE TO	0: (IF	DIF	FERE	NT)										С	ONTA	IT IN	IFOR	RMA	TION:	•		
Company:	LEIL Envila	on ineutal	Co	mpany:						Co	ntact	$()_2$	w	125	100	lle.	,				Cont	act:				
Address: 4	7 W 90005	#7	Ack	ireas:						Pho	200:						, –				Phor	na:				
54	andy ill.	84270								Fox	E										Fax					
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		RY HOURS: Weekdays: 7am							F	REQU	EST	ED.	AN/	ALY	sis					۷A	LID I	TAN	RIX CC	DES	LA	B NOTES:
PLM / PCM	(EM)	RUSH (Same Day) X PRIORI (Rush PCM = 2hr, TE	• • • • • • • • • • • • • • • • • • • •	_STANDARD							Ī								<u> </u>	Air =				ulk = B	<u> </u>	
CHEMIST	DV I ADODATO	RY HOURS: Weekdays: Sar														1				Dust				aint = P	┼──	
Metal(s) / D		RUSH 24 hr						1 1			ļ	ļļ				\Box			<u> </u>	Soil:				pe = W	 	
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Fume Scan	•	RUSH 5 day	_10 day	required for RUSH		Point Count		ĺ		Scan				Quantification	ŀ	1	Ş	S	Drinkii	ng vv				Water = WW	 	
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		apply for afternours, weekends and				g .	≨ક્	4		- Analyte(s) TCLP, Welding Furne,	×	į į	\$ ≠	를 :	٠ .:	[] .	٠.	E	Ě		يوا					
Special Ins	tructions:						TEM - AHERA Seml-quant, Mic		ST · Total,	METALS - /	ORGANICS - METH	Salmonella: +/-	Listena:	Aerobic F	Coliforns	S.aureus	Wold:	MPLER'S	Samplo Volume (L) / Area	Matrix Code	# Containers	1 _	Date llected	Time Collected		mbe r (Laborator Uso Only)
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	-050912W	<u> </u>					×												936	A		÷k	લાટ		85	0575
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Number of s	amples received:	4	(Additional	samples shall be lis	ted on a	attac	hed lo	na fo	m.)		<u> </u>	ш.	٠		<u></u> -	سلسا	-1	L			1				l	
NOTE: RE	I will analyze incoming	samples trased upon information recoired by of Custody shall constitute an analytical:	and will not be respo	nsibla for arrors or omiss	ions in ca	lculati	ons resu	ulting ir	rom th	no Inacci	ıracy	of orlg	inoi d	ata. B	y algni	ing die	nt/cor	npany ro	presontati	va agr	oes the	at subf	nission of	the following sa	mples for re	quested
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A =	Amosite	F = Fiber
An =	Anthophyllite	B = Bundle
C =	Chrysotile	C = Cluster
Cr =	Crocidolite	M = Matrix
T =	Tremolite	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

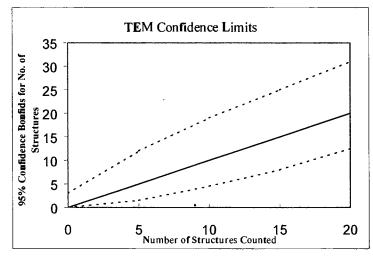
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Aspestos Structure Count

Laboratory name:	REI
Instrutnent	JEOL 100 CX NS
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	RaR
Samole Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	936
Oate received by lab	5/10/12
Lab Job Number:	235505
Lab Sample Number:	880585

Analyzed by	JB
Analysis date	5/11/2
Method (D=Direct, 1=Indirect, IA=Indirect, ashed)	73
Counting rules (ISO, AHERA, ASTM)	Alexa
Grid storaae location	Month Analyzed
Scope Alignment	Oate Analyzed
	•

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used	,				
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (nul)-					

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
Gild	Grid Opering	Туре	Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	E3-1	ND												
	C3-4	ND												
	C3-1	ND			(ups)	4-3	~57	fourtuit		3-5	6 depris			
	33-4	ND			,									
	F3-4	ND				,		B	5/11	12_				
B	Ca2-4	~17						77	1.1		·			
	G12-1	M						. ,						
	E1-6	ND												
	E1-3	V												
		•												

Reservoirs Envfronmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	20BX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondaty Filter Area (mm2)	
QA Type	

Client :	RaR
Sample Type (A=Air, D=Oust):	A
Air volume (L) or dust area (cm2)	936
Date received by lab	5/10/12
Lab Job Number:	235505
Lab Sample Number:	880586

F-Factor Calculation (Indirect Preps Only):									
Fraction of primary filter used									
Total Resuspension Volume (ml)									
Volume Applied to secondary filter (ml)									

Analyzed by	JB
Analysis date	5/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	18
Counting rules (ISO, AHERA, ASTM)	Alera
Grid storage location	Month Analyzed
Scope Alignment	Dale Analyzed

Grid	Grid Grid Opening		Structure No. of Structures		Oime	nsions	Identification	Mineral Class	,			1 = ye	es, blank	= no
	. One opening	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-1	ND						·						-
	G3-1	M		,	Pa	o A	80%	bintant	3-5	% a	ebns			
	F3-1	ND			Pus	oB.	80%	bisbut	3-5	% de	on's			
	E3-1	ND						1: 1						
	C3-1	ND				ι	1	B 5/11/12						
13	H2-3	NO						//		_			·	
	G12-3	ND					/							
	F2-3	20							,					
	EZ-3	5												

Reservoirs Environniental, Inc. **TEM Astrestos Strueture Count**

Laboratory name:	REI
Laboratory name.	
Instrument	JEOL 100 CX (b) S
Voltage (KV)	100 KV
Magnification	<u>ර</u> බ්හ 10KX
Grid openina area (mm2)	0.01
Scale: 1L =	0,28 um
Scale: 1D =	0.056 um
Primary filter area (mrti2)	385
Secondary Filter Area (mm2)	
QA Type	

Rak
A
936
5/10/12
235505
880587

F-Factor Calculation (Indirect Preps Only):

Fraction of primary filter used Total Resuspension Volume (ml) Volume Applied to secondary filter (ml).

Analyzed by	JB
Analysis date	5/11/12
	18
	Alera
Grid storage tocation	Month Analyzed
Scope Alignment	Date Analyzed
	Analyzed by Analysis date Method (D=Direct, I=Indirect, IA=Indirect, ashed) Counting rules (ISO, AHERA, ASTM) Grid storage tocation Scope Alignment

QA Type														
							٠	· ·			·			
Grid	Grid Opening	Structure	No. of Stru	ıctures	Dime	nsions	Identification	Mineral Class	·	· · · · · · · · · · · · · · · · · · ·		1 = y	es, blank	-
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	L
A	G4-1	ND												
	F4-1	150		·		`	· .							
	E4-4	ND			Ya	D5 A	B-	-80%	into	A	7-10%	delo	× 5	
	C44	2			.,₩								·	
	B4-4	8				,		13	5/1	1/12				
3	H2-3	W											•	
													T	۲

1 = yes, blank = no

Reservoirs Environmental, Inc. TEM Astestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX/N) S
Voltage (KV)	100 KV
Magnification	20BX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

RaR
A
930
5/10/12
235505
880588

Fraction of primary filter used	1	
Total Resuspension Volume (ml)		
Volums Applied to secondary filter (ml)		

Analyzed by	JB
Analysis date	5/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	B
Counting rules (ISO, AHERA, ASTM)	Alera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

	Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class			· 1 = ye	es, blank	= no'	
	Gila	Grid Operang	Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
	0	G3-4	ND			·						,		·	
	•	F3-4	ND												
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		C3-4	NP							sh	, 				
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	3	H34	ND					·	//	. '	/ /			,	
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Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = $\frac{\text{\# Asbestos structures}}{\text{Area Analyzed (mm}^2)}$

GO = TEM grid opening



May 14, 2012

Laboratory Code: Subcontract Number: RES NA

Laboratory Report: Project # / P.O. #

RES 235584-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AlHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235584-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely.

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235584-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

May 11, 2012

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 11, 2012

Client		Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	•	ID Nu	mber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
				(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-051012 W		EM	880786	0.0900	89 3	ND	0.0048	BAS	BAS
3W-051012 N		EM	880787	0.0900	89 3	ND	0.0048	BAS	BAS
3W-051012 E		EM	880788	0.1000	660	ND	0.0058	BAS	BAS
3W-051012 S		EM	880789	0.0900	89 3	· ND	0.0048	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm

DATA QA

Due Date:_	S	12-12
Due Time:		> €

REI LAB RESERVOITS ENVIRONMENTEN, INC. 5801 Logan St. Denver, CO 80216 · Ph; 303 984-1886 · Fax 303-477-4275 · Toll Free :886 RESt-ENV

	Pager : 303-509			AIT			•								ONT	1 O T	1845	OD.	IATION	le.				
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Address: 47 U. 9005, 42	OK the Addrsss:			Contact Davi Roskelly Phone:									Phone:											
Sande Ut. 84070				Fax								Fax:												
June 4. 84010						Cett	page	r: C	91	~	111	-/0	20				Cellipagar							
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Project Osecription/Location: 3 28 WCS+ Sub - RMP						1	da	rel	<u> </u>	M	MI	ก่าง	ین	<u> </u>										
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PLM / PCM (TEM) RUSH (Same Day) A PRIORITY (Naxt Day)STANDARD			T	. }			П	T	П	\top	TT	T			A	s =	1		Bulk = B		7		
(Rush PCM = 2hr, TEM = 6hr.)				1 [1				П	Ì	11		ļ		Du	st =	D		Paint = P	-er	L		
CHEMISTRY LABORATORY HOURS: Weekdaya: Sam - Spm]			ŀ				1			11	İ			Sc	əl =	<u>S</u>		Wipe = W		<u> </u>	7+12	
Metal(e) / Dust RUSH 24 hr3-5 Day			ゼ			- }		11	1			11		j		Swa				F = Food		7		
RCRA 8 / Metals & Welding RUSH S day10 day	**Prior notification is regulated for RUSH	Ę	Quant			ន			1	흹		11	ls	l.,	Drin	king '	Wal			e Watar = WW	-	<u>ノ</u>		
rume Scan / JOLF	turnarounds.**	8	Preps			ဖွဲ့			1	휥		11	3	NOTES					= Other		ļ			
Organics 24 hr 3 day 5 Day		Point Count	180.		-	Metals Scan	١,		1	Quantification	5	8	i i	12		STM	I E 17	92 app	roved wi	s media only**	<u> </u>			
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pii				_						8	គ្គន្ទ្រី	8	န္မြ	Έ	1		-				ļ			
E.coli O157:H7, Coliforms, S.aureus 24 hr. 2 Day		report	7402, O-Ind	OSHA		rte(s) Welding Furne,				١٠,		퍨	ଞ୍ଚ ଛ	6	1	i	ı	ŀ			<u> </u>		·	
Salmonella, Listeria, E.coli, APC, Y & M 48 Hr3-5 Day		<u>8</u>	= -		Respirable	g.	١,	٠ إ		ابر	E O	8		ő	1	-					<u> </u>	<u> </u>		
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Special Instructions.		ङ	₹ ₹		<u>:</u>	METALS RCRA 8,	AN E	툂	i j	g :	Colifornis	S.aureus:	휘향	Ä	뿚.	(L) / Area	×	룉	Date	'Tims	EMIN		Jer (Lab Goaly)	oratory
Client sample ID number (Sample ID's must be unique	<u> </u>	PLM	TEN Semi	S.	DUST	METALS RCRA 8,	RG,	N/m		CROE	-1-	147	- ≥	A	E	<u>~</u>	Matrix	8 0	Collecte				,,	
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3 ZW-051012 E			+		4			-	+	\vdash	+	#	+	<u> </u>	66	_	$\left\{ \cdot \right\}$	-	-		 			ව -
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Number of samples received: (Addition	nai samples shall be listed on a	attac	hed lo	ng for	rm.)	$\overline{}$	_								-				· · · · · ·					
NOTE: REI will analyzo incoming samples based upon information received and will not be re analysis as indicated on this Chain of Custody shall constitute an analytical services egreeme	sponsible for errors or omissions in ca	icutati . failu	lons rost	illing fro	om the	e inaccu ment tea	racy o	of oldgi	najd: Litin	ata. By	y Sign X. mo	ing cile	nVco keres	npony re	preseni 18.	allve a	agree	s that s	ubmission	of the following sa	mples for	equ e	sted	
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7-2011_version 1

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
T	=	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

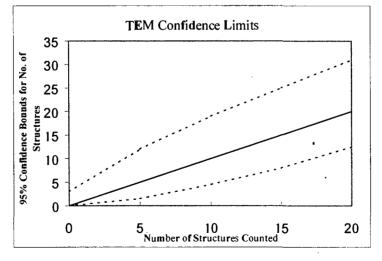
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REi
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	20100 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	RHR
Sample Type (A=Air, D=Dust):	A
Air yolume (L) or dust area (cm2)	823
Date received by lab	5/11/12
Lab Job Number:	235584
Lab Sample Nuriiber:	880786
	1

F-Factor Calculation (indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary (ilter (ml)	

	
Analyzed by	the
Analysis dale	5/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	12
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

Grid	Grid Grid Opening		No. of Str	uctures	Dime	nsions	identification	Mineral Class				1 = ye	es, blank	= no
Gild	Grid Operang	Туре	Primary	Total	Lenoth	Width	identinication	Amohlbole		NAM	Sketch/Comments	Sketch	Photo	EDS-
A	63	M												
	F3-1	M			PV	en A	ns02-11	Jack 5%	del	2/20				
	23	M		,	Pr	er B	807-in	Jacx 5%.	des	i	1.12 01	11/12		
	F3-3	M				, 								
	833	M					·							
B	F3-4	ND		, ,						•				
	E5-4	M									·			
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, , , , , , ,	B5-4	M						,						
					•									

Reservoirs Environmental, Inc. TEM Asbestos Strueture Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltaae (KV)	100 KV
Magnification	20KX IOKX
Grid openina area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary lilter area (mm2)	385
Secondary Filter Area (mm2)	
OA Type	

I LIN ASDESIOS OU de	tare openit
Client:	RIB
Samole Tyoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	893
Date received by lab	5/11/12
Lab Job Number:	235584
Lab Sample Nuritber:	880787

Analyzed by	the
Analysis date	5/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filtet used	<u> </u>
Total Resuspension Volume (mt)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures	Oime	Oimensions		Mineral Class				1 = y	es, blank	= no
O.I.C	Ond Opening	Туре	Primary	Totai	Length	Width	Idenlification	Amohiboie	c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H1-3	W												
	643	3												
	F4-3	2		·	The	y A J	00% onla	er 32 de	bon					
	243	NO			Pn	ex 13	·A	Vard 1 5/11	112					
	25-3	2												
1	F4-6	W												
<u>.</u>	24-4	N												
	CN-6	M												
,	an	M		,		·		• .						

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid openino area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Type	

Client:	RIB
Sample Tyoe (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	660
Date received by lab	5/11/12
Lab Job Number:	235584
Lab Sample Number:	880788

Lab Sample Nuniber:	1000760
F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Analyzed by	ek
Analysis date	5/11/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage tocation	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening Structure		No. of Structures		Dime	Dimensions		Mineral Class			·	1 = yes, blank = no		
Giid	Grid Operating	Туре	Primary	Total	Length	Width	Identification	Amohiboie	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	22-3	M		,			· ·							
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	64-6	M			Pr	ex B.	M-	CA 5-10%	711/12					Ĺ
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	246	NO										ı.		
B	K-11-3	M			·		`							
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	144-1	100												,**
	64-1	M												

Reservoirs Environmental, Inc. TEM Astrestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Maanification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RIB
	Δ_
Sample Tyoe (A=Alr, D=Dust):	
Air yolume (L) or dust area (cm2)	9.93
Date received by lab	5/11/12
Lab Job Number:	235584
Lab Sample Nuitiber:	880789

Analyzed by	the
Analysis date	5/11/12
Method (D=Direct, I=Indirect, IA=IndIrect, ashed)	2
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps (Only):
Fraction of primary filter used	1
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Sta	ictures	Oimer	nsions	Identification	Mineral Class	lineral Class				s, blank	ank = no		
Grid	Ond Opening	Туре	Primary	Total	Lenath	Width		Amphibole	c	NAM	Sketch/Comments	Sketch	Photo	EDS		
A	L4-6	M			!											
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	23-1	M)			i.											
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	·															

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotiie asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: . is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{i}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{\text{1000cc}}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



May 15, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 235688-1 None **G**iven

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT **8**4070

Dear Customer,

Reservoirs Environmental, Inc. Is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235688-1 is the job number assigned to this study. This report Is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described In this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage Is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101890-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235688-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

May 14, 2012

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 15, 2012

Client ID Number	Lab ID Ni	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos · Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-051112 W	EM	881036	0.0900	930	ND	0.0046	BAS	BAS
3W-051112 N	EM	881037	0.0900	930	ND	0.0046	BAS	BAS
3W-051112 E	EM	881038	0.0900	9 2 8	ND	0.0046	BAS	BAS
3W-051112 S	EM	881039	0.0900	928	ND	0.0046	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed C ellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

DATA QA

Due Date: 5.15.12 Due Time:

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Project Numb	er sndfor P.O.#:									Fine	Dets C	Delivere														
Project Descr	ption/Location: 3.0	les Sub-RMP								ユ									_							
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	structions:					I • I	M · AHERA, ni-quam, Mic	M - 7400A,	١ ٥	RCRA 8, TO	ORGANICS - METH Salmonella: +/-	E.co6 0157:H7	Aerobic	E cot:	S.aureus:	Mok	MPLER	Sample Volume (L) / Area	Matrix Code	# Containe	Date Collected	Time Collect	θ		ntser (La Jse Only)	
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
T	=	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

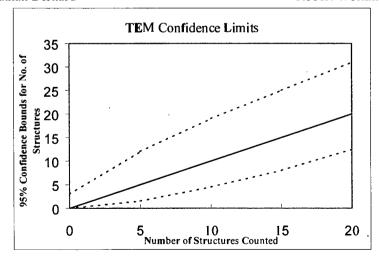
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Laboratory frame.	- KEI
Instrument	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mtn2)	385
Secondary Filter Area (mm2)	
QA Type	

RAR
A
930
5/15/12
235688
881036

Anatyzed by	AH
Analysis date	5/15/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	4
Counting rules (ISO, AHERA, ASTM)	Ahora
Grid storaae location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):							
Fractian of primary filter used							
Total Resuspension Volume (ml)							
Volums Applied to secondary filter (ml)							

Grid	Grid Opening	Structure	No. of Str	uctures	Dimensions		Dimensions		Dimensions		Dimensions		Identification Mineral Class					1 = yes, blank = no		
Gild	Grid Operating	Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS						
A	63-60	ND						·												
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Reservoirs Environmental, Inc. 7EM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	(26)XX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	:
QA Type	

RAR
A
930
5/15/12
235688
881037

F-Factor Calculation (Indirect Preps C	only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	5/4/12
Method (D=Direct, I=Indirect, IA=indiract, ashed)	4
Counting rules (ISO, AHERA, ASTM)	Ahora
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
Ond	ond opening	Туро	Primary	Total	Length	Width	rdentification	Amphibole	c_	NAM	Sketch/Comments	Sketch	Photo	EDS
A	65-60	47					·				`			
	H5-6	MD								,				
	F56	22		Pra	CA:	80%	intaca	5-7	of de	6				
	F5-6	ND		Cia	B-	Piech	1	,						
	C5-6	ND		, v			,							
3	F54	DN					2		·					
	E5-4	2				1.							·	
	C54	20			,									· -
	B54	70												
												·		

Raservoirs Environmental, Ine. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX/N S
Voltage (KV)	100 KV
Magnification	(26)XX 10KX
Grid openina area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	1
QA Type	

R+R
A
929
5/15/12
235688
881038
֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜

cao Campie Humber.	1 30 ,000
F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filtar used	
Totat Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Analyzed by	JB
Analysis date	5/15/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	5
Counting rules (ISO, AHERA, ASTM)	Ahora
Gnd storage location	Month Analyzed
Scope Alignment	Oate Analyzed

Grid	Grid Opening	Structure ·	No. of Str	nctures	Oime	nsions	Identification	Identification Mineral Class				1 = yes, blank		= no
	J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-1	MD			R	w 7	A 80	% inter	4	10-1	5% de bu			
	H4-1	M			Pu	ps I	80	6 inten	4	0-15	Lo de sus			
	G4-1	MD									,			
	F4-1	MD						1/2	,					
	E4-1	ND						AB 5	15/12	ļ				
B	H2-3	ND									τ			
	62-3	M			,									
	F2-3	ND												
	E2-3	,40												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20FCX 10KX
Grid openina area (mm2)	0.01
Scale: iL =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyos	

Client:	R+R
Sample Tyoe (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	928
Date received by lab	5/15/12
Lab Job Number:	235688
Lab Sample Number:	881039

Analyzed by	JB
Analysis date	5/15/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	4
Counting rules (ISO, AHERA, ASTM)	Ahora
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
			Primary	Total	Length	Width	1	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	24-4	ND												
	H4-4	ND		(-,	~p	A	10%	inhat	10	-15	debus			
	K4-4	ND		Pa	70	3	80%	inbut	10-	15%	delous		-	
	1-14-4	ND						/_						
	F4-4	ND			`			AB 5	15/12					
13	K33	MO						// /			i.			
	H3-3	ND							·					
	63-3	NP												
	F3-3	M					-							
				•		•							,	

Analytical Procedures - AHERA

Transtnission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# Asbestos stmctures}{Area Analyzed (mm^2)}$

GO = TEM grid opening